DICOM Conformance Statement

Application Annex:

IntelliSpace Collaboration Viewer on Philips IntelliSpace Portal V10.0

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ICAP-T-030001.09b

Corresponds to ICAP-W-030001.02

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Document Number: ICAP-PF.0034474
Date: 28-March-2018

Table of Contents

1. INTRODUCTION 4
1.1. REVISION HISTORY 4
1.2. TERMINOLOGY 4
2. DATA SPECIFICATIONS 5
2.1. SUPPORTED IOD'S 5
2.1.1. Acceptance Criteria 5
2.1.2. Contents of Created IOD's 6
2.1.2.1. Secondary Capture Image Storage SOP Class 6

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1. Introduction

This DICOM Conformance Statement annex is applicable to the IntelliSpace Collaboration Viewer which is a zero install Web-Viewer on Philips IntelliSpace Portal V10.0 hosting platform, later referred to as IntelliSpace Collaboration Viewer. In general, the IntelliSpace Collaboration Viewer is the user environment for reviewing CT, SC, MR, NM and PET images.

1.1. Revision History

The revision history below provides dates and differences among individual document versions.

Table 1: Revision History

Document Version	Date of Issue	Status	Description
00	28-March-2018	Authorized	Final version.

1.2. Terminology

DICOM	Digital Imaging and Communications in Medicine
IOD	Information Object Definition
UID	Unique Identifier
VR	Value Representation

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2. Data Specifications

2.1. Supported IOD's

This section specifies each IOD accepted and / or created by IntelliSpace Collaboration Viewer.

ACCEPTED The applicable IOD is accepted for storage in the repository of the hosting platform and supported for import in IntelliSpace Collaboration Viewer for viewing and analysis.

CREATED The IntelliSpace Collaboration Viewer supports generation of derived data by using the applicable IOD and is able to store this data in the repository of the hosting platform.

Table 2: Supported IOD's

IOD		Support	
Name	**UID**	**ACCEPTED**	**CREATED**
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	No
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	No
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	No
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Yes	No
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	Yes	No

2.1.1. Acceptance Criteria

This section specifies the acceptance criteria applied by IntelliSpace Collaboration Viewer to which a dataset should adhere before it can be imported into the application.

All system models objects are accepted.

Table 3: Accepted transfer syntaxes per IOD

IOD		Transfer Syntax	
Name	**UID**	**Name**	**UID**
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	CT-private-ELE Explicit VR Little Endian Implicit VR Little Endian JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.3.46.670589.33.1.4.1 1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70
Enhanced CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2.1	CT-private-ELE Explicit VR Little Endian Implicit VR Little Endian JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.3.46.670589.33.1.4.1 1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	CT-private-ELE Explicit VR Little Endian Implicit VR Little Endian JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.3.46.670589.33.1.4.1 1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	CT-private-ELE Explicit VR Little Endian Implicit VR Little Endian	1.3.46.670589.33.1.4.1 1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70

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		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Explicit VR Little Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	CT-private-ELE	1.3.46.670589.33.1.4.1
		Explicit VR Little Endian	1.2.840.10008.1.2.1
		Implicit VR Little Endian	1.2.840.10008.1.2
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70

2.1.2. Contents of Created IOD's

This section specifies in detail the attribute contents of created data objects. Attributes are grouped together by its corresponding module as specified by DICOM standard. Philips private attributes are excluded for specification.

Abbreviations used in the Module table for the column "Presence of Value" are:

ALWAYS	The attribute is always present with a value
EMPTY	The attribute is always present without any value (attribute sent zero length)
VNAP	The attribute is always present and its Value is Not Always Present (attribute sent zero length if no value is present)
ANAP	The attribute is present under specified condition – if present then it will always have a value

The abbreviations used in the Module table for the column "Source" are:

AUTO	The attribute value is generated automatically
CONFIG	The attribute value source is a configurable parameter
COPY	The attribute value source is another SOP instance
FIXED	The attribute value is hard-coded in the application
IMPLICIT	The attribute value source is a user-implicit setting
MPPS	The attribute value is the same as that use for Modality Performed Procedure Step
MWL	The attribute value source is a Modality Worklist
USER	The attribute value source is explicit user input

2.1.2.1. Secondary Capture Image Storage SOP Class

Table 4: IOD of Created Secondary Capture Image Storage SOP Class Instances

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Study	Patient Study Module	CONDITIONAL
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Equipment	SC Equipment Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	SC Image Module	ALWAYS
Image	Overlay Plane Module	CONDITIONAL
Image	Modality LUT Module	CONDITIONAL
Image	VOI LUT Module	CONDITIONAL
Image	SOP Common Module	ALWAYS
Image	Extended DICOM and Private attributes	CONDITIONAL

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Table 5: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Referenced Patient Sequence	0008,1120	SQ		ANAP	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Patient's Name	0010,0010	PN		VNAP	COPY	-
Patient ID	0010,0020	LO		VNAP	COPY	-
Patient's Birth Date	0010,0030	DA		VNAP	COPY	-
Patient's Birth Time	0010,0032	TM		ANAP	COPY	-
Patient's Sex	0010,0040	CS		VNAP	COPY	-
Other Patient IDs	0010,1000	LO		ANAP	COPY	-
Other Patient Names	0010,1001	PN		ANAP	COPY	-
Ethnic Group	0010,2160	SH		ANAP	COPY	-
Patient Comments	0010,4000	LT		ANAP	COPY	-
Issuer of Patient ID	0010,0021	LO		ANAP	COPY	-

Table 6: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	-
Study Time	0008,0030	TM		VNAP	COPY	-
Accession Number	0008,0050	SH		VNAP	COPY	-
Referring Physician's Name	0008,0090	PN		VNAP	COPY	-
Referring Physician Identification Sequence	0008,0096	SQ		ANAP	COPY	-
Study Description	0008,1030	LO		ANAP	COPY	-
Procedure Code Sequence	0008,1032	SQ		ANAP	COPY	-
Physician(s) of Record	0008,1048	PN		ANAP	COPY	-
Physician(s) of Record Identification Sequence	0008,1049	SQ		ANAP	COPY	-
Name of Physician(s) Reading Study	0008,1060	PN		ANAP	COPY	-
Physician(s) Reading Study Identification Sequence	0008,1062	SQ		ANAP	COPY	-
Referenced Study Sequence	0008,1110	SQ		ANAP	COPY	-
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	-
Study ID	0020,0010	SH		VNAP	AUTO	-

Table 7: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAP	COPY	-
Admitting Diagnoses Code Sequence	0008,1084	SQ		ANAP	COPY	-
Patient's Age	0010,1010	AS		ANAP	COPY	-
Patient's Size	0010,1020	DS		ANAP	COPY	-
Patient's Weight	0010,1030	DS		ANAP	COPY	-
Occupation	0010,2180	SH		ANAP	COPY	-
Additional Patient History	0010,21B0	LT		ANAP	COPY	-

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Table 8: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ANAP	AUTO	-
Series Time	0008,0031	TM		ANAP	AUTO	-
Modality	0008,0060	CS		ALWAYS	COPY	-
Series Description	0008,103E	LO		ANAP	COPY	-
Performing Physician's Name	0008,1050	PN		ANAP	COPY	-
Operators' Name	0008,1070	PN		ANAP	COPY	-
Operator Identification Sequence	0008,1072	SQ		ANAP	COPY	-
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAP	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Body Part Examined	0018,0015	CS		ANAP	COPY	-
Protocol Name	0018,1030	LO		ANAP	COPY	-
Patient Position	0018,5100	CS		ANAP	COPY	-
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-
Series Number	0020,0011	IS		VNAP	AUTO	-
Laterality	0020,0060	CS		ANAP	COPY	-
Smallest Pixel Value in Series	0028,0108	US /SS		ANAP	COPY	-
Largest Pixel Value in Series	0028,0109	US /SS		ANAP	COPY	-
Request Attributes Sequence	0040,0275	SQ		ANAP	COPY	-
Performed Procedure Step Start Date	0040,0244	DA		ANAP	COPY	-
Performed Procedure Step Start Time	0040,0245	TM		ANAP	COPY	-
Performed Procedure Step Description	0040,0254	LO		ANAP	COPY	-
Performed Protocol Code Sequence	0040,0260	SQ		ANAP	COPY	-
Comments on the Performed Procedure Step	0040,0280	ST		ANAP	COPY	-

Table 9: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	FIXED	Philips
Institution Name	0008,0080	LO		ANAP	CONFIG	-
Institution Address	0008,0081	ST		ANAP	CONFIG	-
Station Name	0008,1010	SH		ANAP	CONFIG	-
Institutional Department Name	0008,1040	LO		ANAP	CONFIG	-
Manufacturer's Model Name	0008,1090	LO		ANAP	FIXED	Philips Portal
Device Serial Number	0018,1000	LO		ANAP	CONFIG	-
Software Version(s)	0018,1020	LO		ANAP	FIXED	10.x
Spatial Resolution	0018,1050	DS		ANAP	COPY	-
Date of Last Calibration	0018,1200	DA		ANAP	COPY	-
Time of Last Calibration	0018,1201	TM		ANAP	COPY	-
Pixel Padding Value	0028,0120	US /SS		ANAP	COPY	-

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Table 10: SC Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS	CT	ANAP	AUTO	-
Conversion Type	0008,0064	CS	WSD	ALWAYS	AUTO	-
Secondary Capture Device ID	0018,1010	LO		ANAP	AUTO	-
Secondary Capture Device Manufacturer	0018,1016	LO	Philips	ANAP	AUTO	Philips
Secondary Capture Device Manufacturer's Model Name	0018,1018	LO	IntelliSpace Portal	ANAP	AUTO	IntelliSpace Portal
Secondary Capture Device Software Version(s)	0018,1019	LO	10.x	ALWAYS	AUTO	10.x
Video Image Format Acquired	0018,1022	SH		ANAP	AUTO	-
Digital Image Format Acquired	0018,1023	LO		ANAP	AUTO	-

Table 11: General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Date	0008,0022	DA		ANAP	COPY	-
Content Date	0008,0023	DA		ANAP	COPY	-
Acquisition Datetime	0008,002A	DT		ANAP	COPY	-
Acquisition Time	0008,0032	TM		ANAP	COPY	-
Content Time	0008,0033	TM		ANAP	COPY	-
Referenced Image Sequence	0008,1140	SQ		ANAP	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Derivation Description	0008,2111	ST		ANAP	COPY	-
Source Image Sequence	0008,2112	SQ		ANAP	COPY	-
Derivation Code Sequence	0008,9215	SQ		ANAP	COPY	-
Instance Number	0020,0013	IS		VNAP	AUTO, COPY	-
Patient Orientation	0020,0020	CS		ANAP	COPY	-
Images in Acquisition	0020,1002	IS		ANAP	COPY	-
Quality Control Image	0028,0300	CS		ANAP	COPY	-
Burned In Annotation	0028,0301	CS		ANAP	AUTO	-
Lossy Image Compression	0028,2110	CS		ANAP	COPY	-
Lossy Image Compression Ratio	0028,2112	DS		ANAP	COPY	-
Icon Image Sequence	0088,0200	SQ		ANAP	COPY	-
>Samples per Pixel	0028,0002	US		ALWAYS	COPY	-
>Photometric Interpretation	0028,0004	CS		ALWAYS	COPY	-
>Planar Configuration	0028,0006	US		ANAP	COPY	-
>Rows	0028,0010	US		ALWAYS	COPY	-
>Columns	0028,0011	US		ALWAYS	COPY	-
>Pixel Aspect Ratio	0028,0034	IS		ANAP	COPY	-
>Bits Allocated	0028,0100	US		ALWAYS	COPY	-
>Bits Stored	0028,0101	US		ALWAYS	COPY	-
>High Bit	0028,0102	US		ALWAYS	COPY	-
>Pixel Representation	0028,0103	US		ALWAYS	COPY	-
>Smallest Image Pixel Value	0028,0106	US /SS		ANAP	COPY	-

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>Largest Image Pixel Value	0028,0107	US /SS		ANAP	COPY	-
>Red Palette Color Lookup Table Descriptor	0028,1101	US /SS		ANAP	COPY	-
>Green Palette Color Lookup Table Descriptor	0028,1102	US /SS		ANAP	COPY	-
>Blue Palette Color Lookup Table Descriptor	0028,1103	US /SS		ANAP	COPY	-
>Red Palette Color Lookup Table Data	0028,1201	O W		ANAP	COPY	-
>Green Palette Color Lookup Table Data	0028,1202	O W		ANAP	COPY	-
>Blue Palette Color Lookup Table Data	0028,1203	O W		ANAP	COPY	-
>Pixel Data	7FE0,0010	O W/ OB		ANAP	COPY	-
Presentation LUT Shape	2050,0020	CS		ANAP	COPY	-

Table 12: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Planar Configuration	0028,0006	US		ANAP	COPY	-
Rows	0028,0010	US		ALWAYS	AUTO, COPY	-
Columns	0028,0011	US		ALWAYS	AUTO, COPY	-
Pixel Aspect Ratio	0028,0034	IS		ANAP	COPY	-
Pixel Representation	0028,0103	US		ALWAYS	COPY	-
Smallest Image Pixel Value	0028,0106	US/SS		ANAP	COPY	-
Largest Image Pixel Value	0028,0107	US/SS		ANAP	COPY	-
Red Palette Color Lookup Table Descriptor	0028,1101	US/SS		ANAP	COPY	-
Green Palette Color Lookup Table Descriptor	0028,1102	US/SS		ANAP	COPY	-
Blue Palette Color Lookup Table Descriptor	0028,1103	US/SS		ANAP	COPY	-
Red Palette Color Lookup Table Data	0028,1201	OW		ANAP	COPY	-
Green Palette Color Lookup Table Data	0028,1202	OW		ANAP	COPY	-
Blue Palette Color Lookup Table Data	0028,1203	OW		ANAP	COPY	-
Pixel Data	7FE0,0010	OW/OB		ANAP	COPY	-

Table 13: SC Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Date of Secondary Capture	0018,1012	DA		ANAP	AUTO	-
Time of Secondary Capture	0018,1014	TM		ANAP	AUTO	-

Table 14: Overlay Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	6000,0010	US		ALWAYS	AUTO	-

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Overlay Columns	6000,0011	US		ALWAYS	AUTO	-
Overlay Description	6000,0022	LO		ANAP	AUTO	-
Overlay Type	6000,0040	CS		ALWAYS	AUTO	-
Overlay Subtype	6000,0045	LO		ANAP	AUTO	-
Overlay Origin	6000,0050	SS		ALWAYS	AUTO	-
Overlay Bits Allocated	6000,0100	US		ALWAYS	AUTO	-
Overlay Bit Position	6000,0102	US		ALWAYS	AUTO	-
ROI Area	6000,1301	IS		ANAP	AUTO	-
ROI Mean	6000,1302	DS		ANAP	AUTO	-
ROI Standard Deviation	6000,1303	DS		ANAP	AUTO	-
Overlay Label	6000,1500	LO		ANAP	AUTO	-
Overlay Data	6000,3000	OW/OB		ALWAYS	AUTO	-

Table 15: Modality LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rescale Intercept	0028,1052	DS		ANAP	AUTO	-
Rescale Slope	0028,1053	DS		ANAP	AUTO	-
Rescale Type	0028,1054	LO		ANAP	AUTO	-
Modality LUT Sequence	0028,3000	SQ		ANAP	AUTO	-
>LUT Descriptor	0028,3002	US /SS		ANAP	AUTO	-
>LUT Explanation	0028,3003	LO		ANAP	AUTO	-
>Modality LUT Type	0028,3004	LO		ANAP	AUTO	-
>LUT Data	0028,3006	US /OW		ANAP	AUTO	-

Table 16: VOI LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Window Center	0028,1050	DS		ANAP	AUTO	-
Window Width	0028,1051	DS		ANAP	AUTO	-
Window Center & Width Explanation	0028,1055	LO		ANAP	AUTO	-
VOI LUT Sequence	0028,3010	SQ		ANAP	AUTO	-

Table 17: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	AUTO, COPY	-
Instance Creation Date	0008,0012	DA		ANAP	AUTO	-
Instance Creation Time	0008,0013	TM		ANAP	AUTO	-
Instance Creator UID	0008,0014	UI		ANAP	AUTO	-
SOP Class UID	0008,0016	UI		ALWAYS	COPY	-
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	-
Timezone Offset From UTC	0008,0201	SH		ANAP	COPY	-
Contributing Equipment Sequence	0018,A001	SQ		ANAP	AUTO	-
>Manufacturer	0008,0070	LO		ALWAYS	FIXED	Philips
>Institution Address	0008,0081	ST		ANAP	CONFIG	Philips Portal
>Station Name	0008,1010	SH		ANAP	CONFIG	Philips Portal

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>Institutional Department Name	0008,1040	LO		ANAP	CONFIG	
>Software Version(s)	0018,1020	LO		ANAP	FIXED	10.x
>Device Serial Number	0018,1000	LO		ANAP	FIXED	IntelliSpace Portal
>Institution Name	0008,0080	LO		ANAP	CONFIG	
>Manufacturer's Model Name	0008,1090	LO		ANAP	FIXED	IntelliSpace Portal
>Purpose of Reference Code Sequence	0040,A170	SQ		ALWAYS	FIXED	-
>>Code Value	0008,0100	SH	109102	ALWAYS	FIXED	109102
>>Coding Scheme Designator	0008,0102	SH	DCM	ALWAYS	FIXED	DCM
>>Code Meaning	0008,0104	LO	Processing Equipment	ALWAYS	FIXED	Processing Equipment

Table 18: Extended DICOM and private attributes for Secondary Capture Image Storage SOP Class Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Curve Dimensions	50xx,0005	US		ANAP	AUTO	-
Number of Points	50xx,0010	US		ANAP	AUTO	-
Type of Data	50xx,0020	CS		ANAP	AUTO	-
Data Value Representation	50xx,0103	US		ANAP	AUTO	-
Curve Data	50xx,3000	OB /O W		ANAP	AUTO	-
Curve Description	50xx,0022	LO		ANAP	AUTO	-
Axis Units	50xx,0030	SH		ANAP	AUTO	-
Axis Labels	50xx,0040	SH		ANAP	AUTO	-
Minimum Coordinate Value	50xx,0104	US		ANAP	AUTO	-
Maximum Coordinate Value	50xx,0105	US		ANAP	AUTO	-
Curve Range	50xx,0106	SH		ANAP	AUTO	-
Curve Data Descriptor	50xx,0110	US		ANAP	AUTO	-
Coordinate Start Value	50xx,0112	US		ANAP	AUTO	-
Coordinate Step Value	50xx,0114	US		ANAP	AUTO	-
Curve Label	50xx,2500	LO		ANAP	AUTO	-
Referenced Overlay Sequence	50xx,2600	SQ		ANAP	AUTO	-
>Referenced SOP Class UID	0008,1150	UI		ANAP	AUTO	-
>Referenced SOP Instance UID	0008,1155	UI		ANAP	AUTO	-
>Referenced Overlay Group	50xx,2610	US		ANAP	AUTO	-

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